

Implementing the S-100 to meet Goal 1 of the IHO Strategic Plan

Shom – Transitioning to S-100

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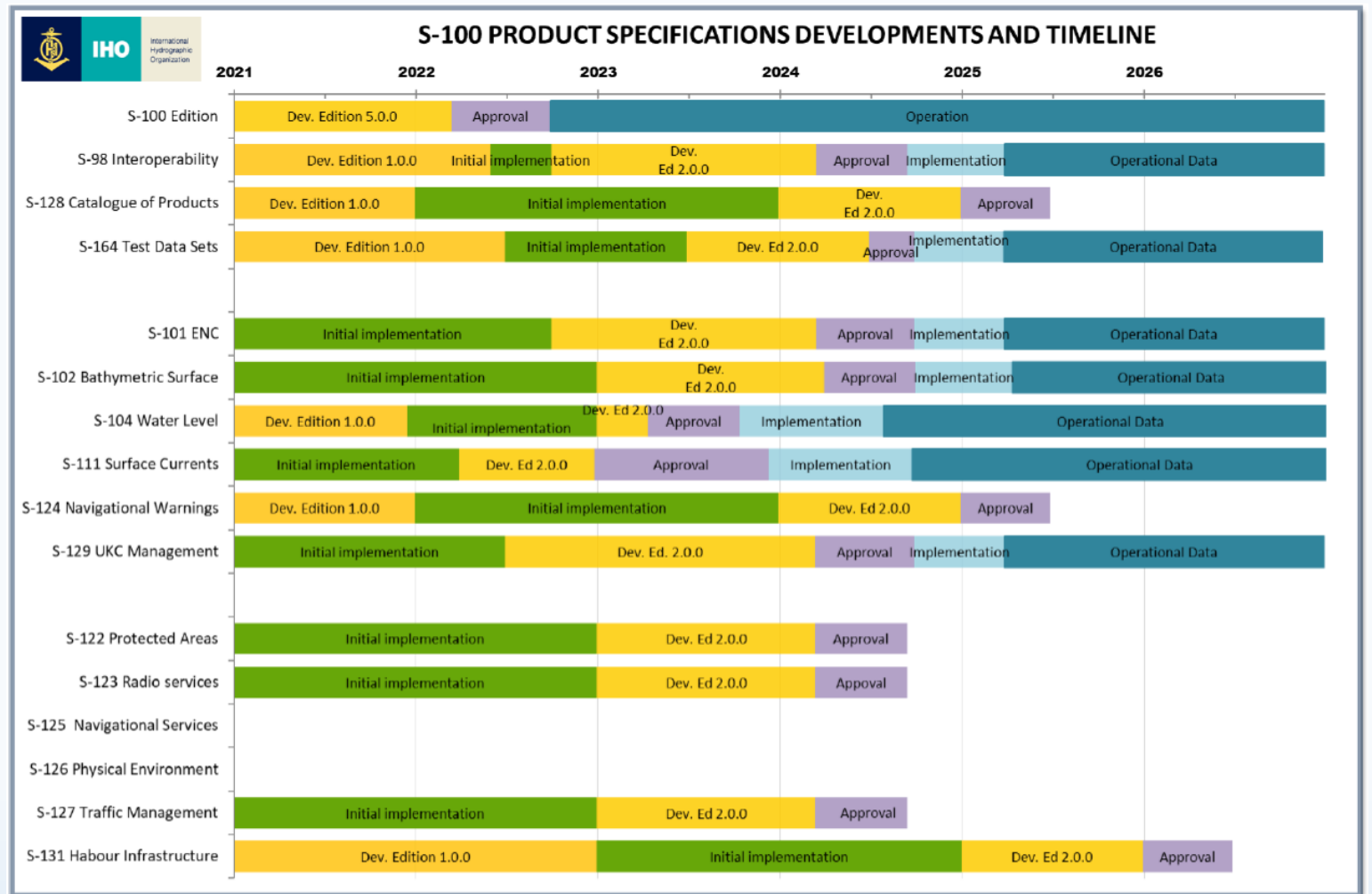
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GOAL 1 gap analysis : SWPHC common issues

GOAL 1	Target	Current State	Gap	Actions
<p>Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation</p>	<ul style="list-style-type: none"> • Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision • Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment • Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation 	<ul style="list-style-type: none"> • Some SWPHC members involved in relevant IHO committees, WGs and PTs related to S-100 (HSSC, S-100WG, S1xx-PT, ENCWG, WENDWG...) <i>[AU, FR, ID, NZ, UK, US]</i> • Some SWPHC HOs setting up S-100 implementation roadmaps • Some joint reflection with national bodies involved in navigation matters through governmental initiatives : e-navigation strategy and supply of digital products and services • Good coordination at national scale of data governance by including international standards 	<ul style="list-style-type: none"> • No operationalized production and distribution of S-100 data products and services yet • No operational standards for most of S-1XX products • Need for additional capacity to manage the transition from existing products to S-1xx products 	<ul style="list-style-type: none"> • Share and develop S-100 implementation strategy iteratively, in line with user demand and needs, and taking into account IHO/IMO timeline, • Carry out studies, experimentations, with partners and the hydrographic community to prepare the production of S-1xx • Engage with national relevant bodies to define e-navigation strategy and distribution of electronic data, products and services • Develop SWPHC MSDI WG in line with the UN SDG based on UN-GGIM IGIF

IHO S-100 Roadmap

- S-101 and S-98 on interoperability ready for operational data in 2025
- Implementation priorities to Route Monitoring S-1xx Products



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S-101 added value compared to S-57

- **The foundation layer interoperable with other S-100 products**
e-navigation route planning and route monitoring
- **Machine readable (additional objects, attributes, symbols,...)**
- **Reinforced cybersecurity and data integrity**
in the context of reinforced consideration by IMO for cybersecurity
- **Technical improvements (better text positioning, remove of overuse of caution areas, new objects such AIS, highlight of updates, lights description...)**
Hopes for the automated paper chart production



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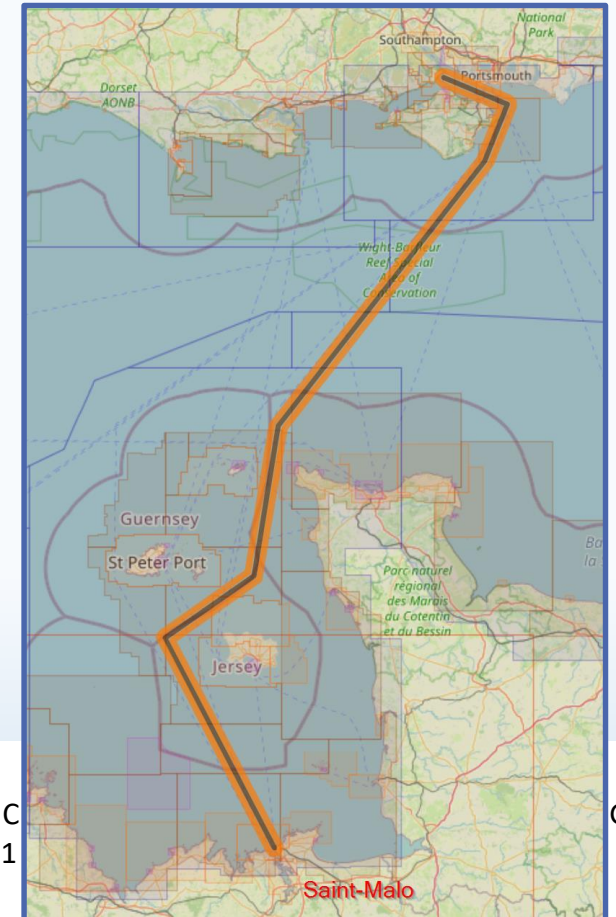
Transitioning to S-100 in Shom – S-100 ECDIS

- **The conversion in Shom will be synchronized with the IMO S-100 ECDIS transition schedule**

No significant use of S-100 based products without S-100 ECDIS under SOLAS and IMO carriage requirements

Actions:

- Shom supports HSSC for the revision of the IMO ECDIS Guidance & ECDIS Performance standards (resolution MSC.232(82)) with participation of CIRM, IEC, Intertanko
- UKHO-Shom ECDIS Project in the Channel (dual fuel, schemes)
- Shom S-1xx experiments



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Goal



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Transitioning to S-100 in Shom – S-100 ECDIS



lab activities


- Monitoring & forecasting of civil and military needs and of AI and Big Data technologies
- Building an ecosystem of public-private-defence innovation.
- Development & support of innovation projects - from idea to incubation:
 - Co-construction workshop to develop an idea;
 - Prototyping;
 - Preparation of scaling-up
- Communication and outreach.
- Development of internal skills.

Methods and workspaces to encourage collaboration



Innovate


a strategic objective of COP* 2021 - 2024




Modernize the processes for acquiring, processing, modeling and disseminating data, products and services and anticipate future capacity requirements.



Launch experiments: key drivers = artificial intelligence, big data, new opportunities, etc.



Design new products and services to meet users needs.



Federate initiatives by ensuring the coordination and coherence of innovation in Shom.



Encourage agents and support their innovation initiatives.


Focus



Artificial intelligence
improve the efficiency of data processing by exploiting the potential of new technologies.



S-100
Universal hydrographic data model: renew the range of products and services to increase the Shom users panel.
A framework for the development of digital products and services for hydrographic, maritime and GIS communities.



#hydrospatial





S-100 WORLD

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Transitioning to S-100 in Shom – S-101

- **The conversion to S-101 will be voluntaristic and limited in time**

Around FR 850 S-57 cells to convert

FR S-101 ENC's will become

- the reference coverage (and no longer the FR S-57 ENC's)
- the foundation layer for other S-1xx products (S-98 on interoperability)
- The source for paper chart

Actions :

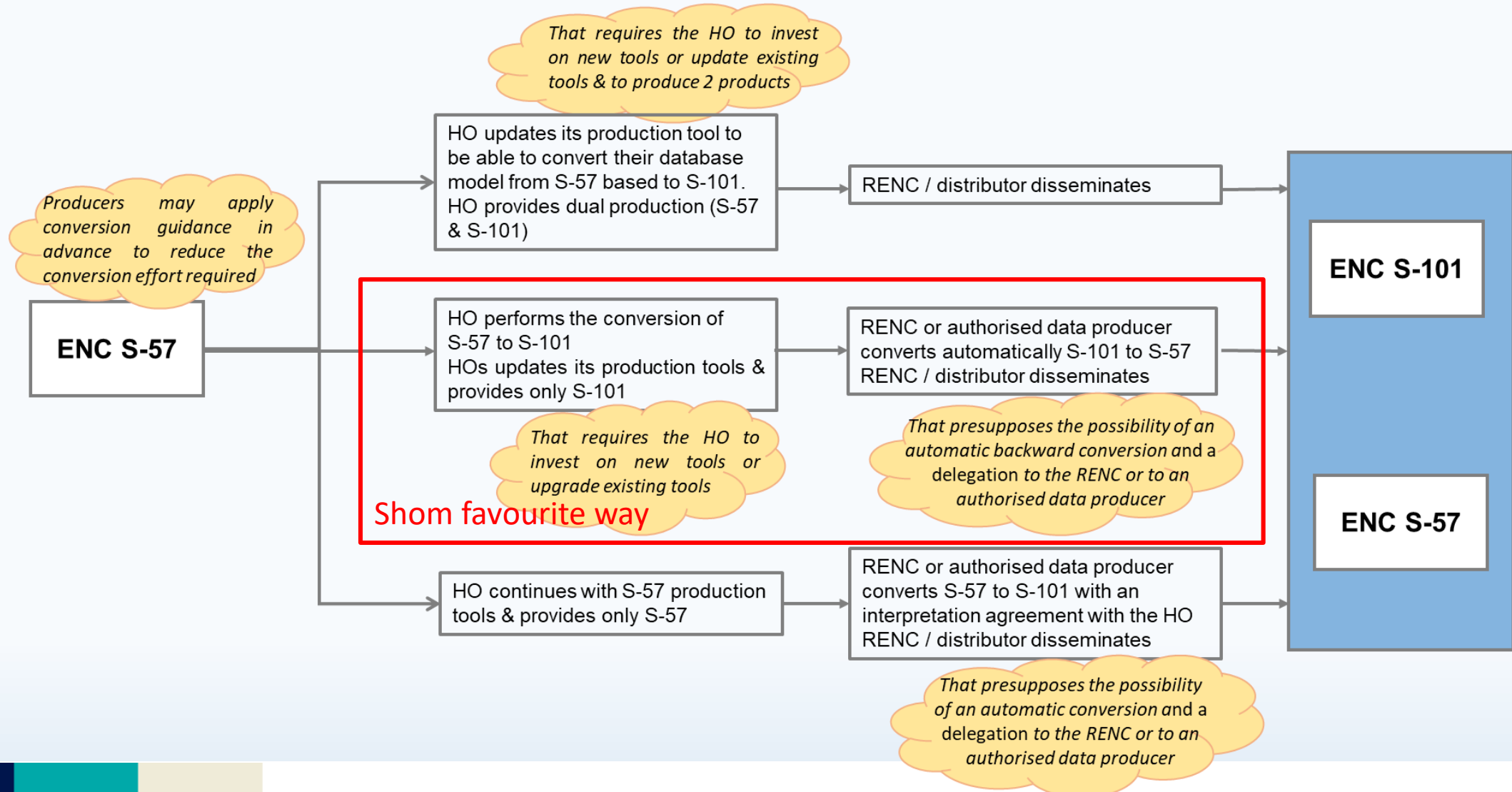
- First version of the Shom roadmap S-100 approved in July 2021
- Dedicated Shom team for the transition to S-101
- Contribution to the international effort (IHO WGs, IHO Singapore Lab, RENC PRIMAR, industry, etc.)



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Transitioning to S-100 - Dual Fuel – Ways for HOs



Transitioning to S-100 in Shom - Dual Fuel

- **Mastering the conversions S-57 to S-101 and vice versa : a key factor of success**
- **Shom intends to delegate to a third party (RENC PRIMAR) the availability of the FR S-57 ENC**
 - When the S-101 ENC coverage is complete, FR S-57 will become a “by-product”
 - PRIMAR would produce and maintain the FR S-57 ENC

Actions:

- International effort (HSSC, industry)
- PRIMAR Development Project on conversions (S-57 to S-101 and vice versa) with the participation of Shom



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Transitioning to S-101 in Shom in summary

- **Dual Fuel**

Shom only produces S-101 ENC (and ER)

PRIMAR converts S-101 ENC (and ER) to S-57 ENC (and release S-57 ENC without HO interaction)

=> Shom contributes to the international efforts to develop automatic converters

- **Paper chart production**

Use of tools from S-101 ENC (choice to place toponymy, etc)

Simplify paper chart (use of symbols, rules, mapping, etc)

=> Automatization of paper chart production from S-101 ENC



Transitioning to S-100 in Shom – Security

The Cyber issue is essential in today's world and for Shom the SENC delivery option has no reason to exist today

S-100 induces progress in data integrity and security with the IHO Data Protection Scheme (S-100 Part 15)

The limitations of ECDIS machines are no longer an issue

Let's not diminish the scope of S-100 by keeping the SENC delivery option

Action:

- HSSC13 discussed the SENC delivery issue for the sake of cyber security and a work is handled by the S100 WG



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Transitioning to S-100 in Shom - Cooperation

- **Mastering the 2 ways conversion S-57 S-100: a key factor success for the HOs**

Shom proposes that the IHO Singapore Laboratory work on the automated conversions s-101 to S-57 and vice versa

- **Shom promotes capacity building**

At the RHC level, organisation of S-100 seminars (with participation of RENCs as instance PRIMAR)

Training courses set up by the RENCs specific to the subject S-100/S-101

Opportunity to develop distant training on S-100 issues via the establishment of IHO E-learning platform by the ROK (to be operational in 2022)



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Merci!

